



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,252	02/06/2006	Zohar Katzman	27220U	3051
20529 7590 06/04/2010 THE NATH LAW GROUP 112 South West Street Alexandria, VA 22314				
EXAMINER CERNOCH, STEVEN MICHAEL				
ART UNIT		PAPER NUMBER		
3752				
MAIL DATE		DELIVERY MODE		
06/04/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/567,252

Applicant(s)

KATZMAN ET AL.

Examiner

STEVEN M. CERNOCH

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2010.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 and 48-55 is/are pending in the application.
4a) Of the above claim(s) 11-17, 36-41, 44 and 49-51 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10, 18-35, 42, 43, 45-48 and 52-55 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 13 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Prioritization's Patent Drawing Review (PTO-544)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-9, 24-30, 32-35, 42, 43, 48, 52, 53 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al. (US Pat No 4,919,332) in view of Scott et al. (US Pat No 6,457,656 B1).

Re claim 1, Bailey et al. shows a sprinkler (Fig. 1, 1) comprising a housing (2) fitted with an inlet port (4,5) connectable to a water supply line and extending into an inlet chamber (3), a hollow stem member (8) with an inlet end (20) thereof being in flow communication with said inlet chamber and an outlet end thereof being in flow communication with an irrigation head (12); a diaphragm seal (16) sealingly fixed at peripheral boundaries thereof to the housing and sealingly articulated to the stem member and supporting the stem member at an essentially upright position; said diaphragm being deformable between a first position in which the irrigation head is retracted within the housing and a second position in which the irrigation head projects from the housing (col. 5, lines 8-16).

Bailey et al. does not teach the stem member being radially supported to enable only sliding displacement in an axial direction from the inlet chamber toward the irrigation head without any tilt or rotation, wherein the diaphragm is fully contained within the housing in both the first and second portions.

However, Scott et al. does teach the stem member (Fig. 3, 120) being radially supported (128b, 132) to enable only sliding displacement in an axial direction from the inlet chamber toward the irrigation head without any tilt or rotation, wherein the diaphragm (128) is fully contained within the housing in both the first and second portions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the radial support and diaphragm of Bailey et al. with that of Scott et al. to support the stem for vertical reciprocation (col. 4, lines 40-42).

Re claim 2, Bailey et al. shows wherein the stem member and the irrigation head are axially displaceable within the housing, respective to deformation of the diaphragm seal (col. 5, lines 8-16).

Re claim 3, Bailey et al. shows where the diaphragm seal is a beveled annular disc made of an elastic material (col. 4, lines 17-23).

Re claim 4, Bailey et al. shows wherein the housing comprises a shielding portion (Fig. 1, 22) accommodating at least a portion of the stem member and the irrigation head.

Re claim 5, Bailey et al. shows further comprising a cover member (Fig. 1, 15) articulated to one of the stem member and the irrigation head, whereby the shielding portion is closable by said cover member at the first position.

Re claim 6, Bailey et al. shows wherein the shielding portion is formed with one or more drain ports (Fig. 1, nearest 22).

Re claim 7, Bailey et al. shows wherein the one or more drain ports are sealed at the first position (Fig. 1, 15).

Re claim 8, Bailey et al. shows wherein at the first position a portion of the stem or of an articulated bridge portion (Fig. 1, 22) displaces into sealing engagement with the one or more drain ports.

Re claim 9, Bailey et al. shows being a rotary sprinkler fitted with a reactionary rotatable sprinkler head (col. 4, lines 65-66).

Re claim 24, Bailey et al. shows wherein the diaphragm seal divides the housing into a pressurized zone at a side thereof facing the inlet port, and an essentially atmospheric pressure zone at its other side (Fig. 1, 16).

Re claim 25, Bailey et al. shows wherein the housing is suitable for suspending at an inverted position with the inlet port up and the irrigation head down (col. 5, lines 21-29).

Re claim 26, Bailey et al. shows wherein the diaphragm seal is biased into its first position (Fig. 1, 16).

Re claim 27, Bailey et al. shows wherein the diaphragm seal (Fig. 1, 16) is biased by a coiled spring (19) bearing at a first end against a portion of the housing and at a second end against a portion of the stem member.

Re claim 28, Bailey et al. shows wherein at its second position the diaphragm seal bears against a corresponding supporting surface of the housing (Fig. 2, 16, 22).

Re claim 29, Bailey et al. shows wherein the diaphragm seal is sealingly retained over an annular groove of the stem member (Fig. 2, 16).

Re claim 30, Bailey et al. shows the diaphragm seal is articulated to the stem member eliminating radial and axial tolerance (Fig. 2, 16).

Re claim 32, Bailey et al. shows wherein the diaphragm seal is substantially untensed at either of its two respective positions (Figs 1 & 2, 16).

Re claim 33, Bailey et al. shows wherein the diaphragm seal is beveled (Fig. 1, 18).

Re claim 34, Bailey et al. shows wherein the beveled diaphragm seal toggles into its respective first and second positions (Figs 1 & 2, 18).

Re claim 35, Bailey et al. shows wherein the beveled diaphragm seal comprises an outer peripheral portion (Fig. 1, 18) for clamp engagement to the housing, an inner peripheral portion (17) for annularly arresting the stem member, and a beveled portion intermediate said peripheral portions.

Re claim 42, Bailey et al. shows wherein axial displacement of the stem member is restricted by a shoulder of the stem member (Fig. 2, 20) engageable with a corresponding bearing surface (21) of the housing.

Re claim 43, Bailey et al. shows wherein the housing further comprises an attachment (Fig. 1, 22) for articulation to a support (13).

Re claim 46, Bailey et al. shows wherein the stem member is supported within the housing in a fashion allowing only axial displacement thereof (Figs 1 & 2, 8).

Re claim 48, Bailey et al. shows comprising a cover member (Fig. 1, 15) serving for two or more functions, the functions comprising closing a shielding portion of the housing (2), serving as a bridge for supporting the irrigation head at an end thereof

remote from an outlet nozzle (14), receiving the outlet nozzle, rotatably supporting (col. 4, lines 65-66) the irrigation is head, and closing draining ports of the housing at the first position (Fig. 1, nearest 22).

Re claim 52, Bailey et al. shows wherein the irrigation head substantially retains its axial position with respect to the stem member, at the two respective positions (Figs 1 & 2, 12).

Re claim 53, Bailey et al. shows fitted for an upright or an inverted position (col. 5, lines 21-29).

Re claim 55, Bailey et al. shows a sprinkler (Fig. 1, 1) comprising a housing (2) fitted with an inlet port (4,5) extending into an inlet chamber (3) and comprising a beveled diaphragm seal (16) having a first face thereof exposed to pressure within the inlet chamber and a second face exposed to atmospheric pressure; a stem member (8) articulated to said beveled diaphragm seal and having an inlet end (20) thereof extending into the inlet chamber and having an outlet end articulated to an irrigation head (12); wherein the diaphragm seal is normally retained at a first toggle position where the sprinkler head is concealed within the housing, and where water pressure within the inlet chamber deforms the beveled diaphragm seal into a second toggle position where the sprinkler head axially displaces and projects from the housing (col. 5, lines 8-16).

Bailey et al. does not teach the stem member being radially supported to enable only sliding displacement in an axial direction from the inlet chamber toward the

irrigation head without any tilt or rotation, wherein the diaphragm is fully contained within the housing in both the first and second portions.

However, Scott et al. does teach the stem member (Fig. 3, 120) being radially supported (128b, 132) to enable only sliding displacement in an axial direction from the inlet chamber toward the irrigation head without any tilt or rotation, wherein the diaphragm (128) is fully contained within the housing in both the first and second portions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the radial support and diaphragm of Bailey et al. with that of Scott et al. to support the stem for vertical reciprocation (col. 4, lines 40-42).

Claims 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al. (US Pat No 4,919,332) in view of Scott et al. (US Pat No 6,457,656 B1) as applied to claims 1-9, 24-30, 32-35, 42, 43, 48, 52, 53 and 55 above, and further in view of Lawson et al. (US Pat No 6,186,413 B1).

Re claim 18, Bailey et al. does not show wherein the inlet port is fitted with a filter.

However, Lawson et al. does teach wherein an inlet port is fitted with a filter (Fig. 2, 74).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the inlet port of Bailey et al. with the filter of Lawson et al. to admit a small water flow when the sprinkler is turned off (col. 6, lines 13-14).

Re claim 19, Bailey et al. does not show wherein the inlet chamber is fitted with a flow control assembly.

However, Lawson et al. does teach wherein the inlet chamber is fitted with a flow control assembly (Fig. 2, 74).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the inlet port of Bailey et al. with the filter of Lawson et al. to admit a small water flow when the sprinkler is turned off (col. 6, lines 13-14).

Re claim 20, Bailey et al. does not show wherein the flow control assembly comprises a flexible membrane retained within the inlet chamber which responsive to pressure differential there over is deformable to constrict the cross section area of a liquid flow path into the inlet end of the stem member.

However, Lawson et al. does teach wherein the flow control assembly (Fig. 2, 74) comprises a flexible membrane retained within the inlet chamber which responsive to pressure differential there over is deformable to constrict the cross section area of a liquid flow path into the inlet end of the stem member (col. 6, lines 10-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the inlet port of Bailey et al. with

the filter of Lawson et al. to admit a small water flow when the sprinkler is turned off (col. 6, lines 13-14).

Re claim 21, Bailey et al. does not show wherein the flow control assembly is axially displaceable along with the stem member.

However, Lawson et al. does teach wherein the flow control assembly is axially displaceable along with the stem member (Fig. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the inlet port of Bailey et al. with the filter of Lawson et al. to admit a small water flow when the sprinkler is turned off (col. 6, lines 13-14).

Re claim 22, Bailey et al. does not show wherein at the first position the flexible membrane bears against the inlet port, thus serving as a leak preventing device, ensuring the inlet port is sealed until water pressure at the inlet port reaches a minimal nominal pressure.

However, Lawson et al. does teach wherein at the first position the flexible membrane (Fig. 2, 74) bears against the inlet port (76), thus serving as a leak preventing device, ensuring the inlet port is sealed until water pressure at the inlet port reaches a minimal nominal pressure.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the inlet port of Bailey et al. with the filter of Lawson et al. to admit a small water flow when the sprinkler is turned off (col. 6, lines 13-14).

Claims 10, 23 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al. (US Pat No 4,919,332) in view of Scott et al. (US Pat No 6,457,656 B1) as applied to claim 1-9, 24-30, 32-35, 42, 43, 48, 52, 53 and 55 above, and further in view of Mehoudar et al. (US Pat No 6,000,634).

Re claim 10, Bailey et al. does not show wherein the sprinkler head is formed with an axial boss rotatably received within a corresponding bushing receptacle formed at a top of a bridge member articulated to the stem member.

However, Mehoudar et al. does teach wherein the sprinkler head (Fig. 1, 8) is formed with an axial boss (9b) rotatably received within a corresponding bushing (10) receptacle formed at a top of a bridge member (11) articulated to the stem member.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the sprinkler head of Bailey et al. with the boss and bushing of Mehoudar et al. to make integral the sprinkler head and cover (col. 3, lines 14-17).

Re claims 23 & 31, Bailey et al. does not show fitted with a differential pressure control assembly comprising a differential pressure membrane received within the inlet chamber and supported adjacent the inlet end of the stem member, herein said membrane deforms responsive to pressure differential between an inlet face thereof and an outlet face thereof to thereby vary a through-flow path into said inlet end of the stem.

However, Mehoudar et al. does teach a differential pressure control assembly (Fig. 1, 29) comprising a differential pressure membrane received within the inlet

chamber and supported adjacent the inlet end of the stem member, herein said membrane deforms responsive to pressure differential between an inlet face thereof and an outlet face thereof to thereby vary a through-flow path into said inlet end of the stem (col. 4, lines 26-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the inlet port of Bailey et al. with the differential pressure membrane of Mehoudar et al. to supply a substantially constant flow rate (col. 4, lines 26-31).

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al. (US Pat No 4,919,332) in view of Scott et al. (US Pat No 6,457,656 B1) as applied to claim 1-9, 24-30, 32-35, 42, 43, 48, 52, 53 and 55 above, and further in view of McKenzie et al. (US Pub No 2002/0153432).

Re claim 45, Bailey et al. does not show wherein the stem member is fitted, adjacent the outlet end thereof, with inwardly projecting radial flow straightening fins.

However, McKenzie et al. does teach wherein the stem member is fitted, adjacent the outlet end thereof, with inwardly projecting radial flow straightening fins (Fig. 3, 33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the stem of Bailey et al. with the straighteners of McKenzie et al. to reduce turbulence in the flow passing through (paragraph 0063).

Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al. (US Pat No 4,919,332) in view of Scott et al. (US Pat No 6,457,656 B1) as applied to claim 52 above, and further in view of Bethea et al. (US Pat No 6,340,059 B1).

Re claim 54, Bailey et al. does not show wherein a hook is provided for suspension of the sprinkler an upright position or at inverted position.

However, Bethea et al. does teach wherein a hook is provided for suspension of the sprinkler an upright position or at inverted position Fig. 1, 30, 40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the motivation to modify the sprinkler of Bailey et al. with the hook of Bethea et al. to securely mount the sprinkler (col. 3, lines 63-65).

Response to Arguments

Applicant's arguments with respect to claims 1-55 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN M. CERNOCH whose telephone number is (571)270-3540. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571)272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. M. C./
Examiner, Art Unit 3752
6/3/2010

/Len Tran/
Supervisory Patent Examiner, Art Unit 3752